

WHAT IS CLAIMED IS:

1. A needle bearing adapted to be mounted in an annular space between an external member and an internal member so as to allow a relative rotation between the external and internal members,  
5 the needle bearing comprising:

a retainer of a substantially-annular shape having a plurality of substantially-rectangular restriction holes therein extending in an axial direction of the retainer so as to be spaced at a predetermined interval in a circumferential  
10 direction of the retainer; and

a plurality of needle rollers each of which is received in the respective restriction hole at a radially-outward end portion thereof and is held in rolling contact with both of an inner periphery of the external member and an outer periphery  
15 of the internal member,

wherein a sliding-contact region, to which a restriction member for limiting an axial movement of the needle rollers is allowed to be brought into sliding contact, is formed on an end surface of the plurality of needle roller; and

20 a radial inner end of the retainer is spaced radially outwardly from a radial outer end of the sliding-contact region.

2. A needle bearing according to claim 1, wherein the  
25 retainer has an inner diameter which is uniform over an entire

axial length thereof.

3. A speed reducer comprising:

a shaft serving as an internal member;

5 an external gear serving as an external member, wherein the external gear reduces a speed of rotation of the shaft, and transmits the rotation to an output member;

a needle bearing provided in an annular space formed between the shaft and the external gear; and

10 a restriction member for limiting an axial movement of the needle bearing;

the needle bearing comprising:

a retainer of a substantially-annular shape having a plurality of substantially-rectangular restriction holes  
15 therein extending in an axial direction of the retainer so as to be spaced at a predetermined interval in a circumferential direction of the retainer; and

a plurality of needle rollers each of which is received in the respective restriction hole at a radially-outward end  
20 portion thereof and is held in rolling contact with both of an inner periphery of the external member and an outer periphery of the internal member,

wherein a sliding-contact region, to which the restriction member is allowed to be brought into sliding  
25 contact, is formed on an end surface of the plurality of needle

roller; and

an inner diameter of the retainer is larger than an outer diameter of the restriction member disposed close to the needle rollers, so that a radial inner end of the retainer is spaced  
5 radially outwardly from a radial outer end of a sliding-contact region.

4. A speed reducer according to claim 3, wherein an inner ring of a conical bearing, rotatably supporting the shaft, is  
10 served as the restriction member.

5. A speed reducer according to claim 3, wherein a plurality of the needle bearings are arranged so as to be spaced from each other in an axial direction thereof, and a restriction  
15 flange serving as the restriction member is formed on the shaft so as to be interposed between adjacent ones of the needle bearings, and the inner diameter of the retainer at an axial end thereof is larger than an outer diameter of the restriction flange.

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